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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,605

03/14/2006

Hannu Mäkelä

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EXAMINER

KONG, SZE-HON

ART UNIT

PAPER NUMBER

3661

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,605	<b>Applicant(s)</b> MÄKELÄ, HANNU	
	<b>Examiner</b> SZE-HON KONG	<b>Art Unit</b> 3661	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/14/2006</u> .   | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 3/14/2006 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648) in view of Schimmel et al. (4,885,690).

For claim 1, 4 and 7, Kita discloses a system and method for stopping an unmanned mine vehicle in a predetermined position (Col. 5, lines 13-34), the system comprising: a control unit including at least a first control unit in the mine vehicle; a second control unit outside the mine vehicle; a data transmission connection between said control units; the mine vehicle being controlled by the control system (Col. 3, lines 39-56), and the method comprising: driving the mine vehicle, controlled by said control system, towards a predetermined position; monitoring at least a speed of the mine

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vehicle (Col. 3, lines 33-56), driving the mine vehicle at a speed significantly lower than a normal driving speed against at least one physical obstacle that is arranged in a predetermined position (Col. 5, lines 9-12, col. 8, lines 55-64 and col. 11, lines 1-8).

Kita does not disclose monitoring a speed of the driving power transmission of the mine vehicle and means for stopping the mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value. Schimmel discloses monitoring a speed of the driving power transmission of the mine vehicle (Col. 3, lines 4-12), and means for stopping the mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value (Col. 4, lines 40-61). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to monitor a speed of the driving power transmission of the mine vehicle and with means for stopping the mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value, taught by Schimmel for reduce and stop slippage and better fuel economy of the vehicle.

For claim 3 and 8, Kita discloses the system comprises members for monitoring speed of the traction wheels of the vehicle (Col. 5, lines 58-68), monitoring a rotation speed of a motor of the mine vehicle (Col. 10, lines 47-52); and stopping the mine vehicle when the ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined (Col. 5, lines 13-23).

Kita does not disclose the vehicle is driven at a given gear of a driving power transmission against the obstacle and determining a speed of the driving power transmission. Schimmel discloses the system comprises members for determining a speed of the driving power transmission (Col. 3, lines 17-28) and the vehicle is driven at a given gear of a driving power transmission against the obstacle (Col. 5, lines 1-11). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to include members for determining a speed of the driving power transmission and drive the vehicle at a given gear of a driving power transmission against the obstacle and determining a speed of the driving power transmission, taught by Schimmel for reduce and stop slippage and better fuel economy of the vehicle.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648) and Schimmel et al. (4,885,690) as applied to claim 1 above, and further in view of Kohler et al. (6,450,281).

For claim 2, Kita discloses monitoring the speed of traction wheels (Fig. 20 and col. 15, lines 11-14), but not stopping the mine vehicle when the ratio of the speed of at least one traction wheel to the speed of the mine vehicle exceeds a predetermined limit value. Kohler discloses stopping the mine vehicle when the ratio of the speed of at least one traction wheel to the speed of the mine vehicle exceeds a predetermined limit value (Col. 4, lines 4-7 and col. 5, lines 16-29). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to stop

the vehicle when the ratio of the speed of at least one traction wheel to the speed of the mine vehicle exceeds a predetermined limit value, taught by Schimmel to ensure a stable vehicle behavior against the obstacle.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648) and Schimmel et al. (4,885,690) as applied to claim 1 above, and further in view of Kanazawa et al. (JP63308611).

For claim 5, Kita does not specifically disclose a method comprising driving at least one wheel of the mine vehicle against the obstacle. Kanazawa discloses driving the frame of the mine vehicle against the obstacle (Abstract). It is well known and obvious in the art that having any specific part of the vehicle driving against the obstacle does not present any novelty or inventive entity. It would have been obvious for one of ordinary skill in the art to modify the invention of Kita to drive the frame of the mine vehicle against the obstacle, taught by Kanazawa to stop and trigger the stopping behavior of the vehicle.

For claim 6, Kita does not specifically disclose a method comprising driving the frame of the mine vehicle against the obstacle. Kanazawa discloses driving the frame of the mine vehicle against the obstacle (Abstract). It would have been obvious for one of ordinary skill in the art to modify the invention of Kita to drive the frame of the mine vehicle against the obstacle, taught by Kanazawa to stop and trigger the stopping

behavior of the vehicle.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648) and Schimmel et al. (4,885,690) as applied to claim 7 above, and further in view of Dyke (3,068,716).

For claim 9, Kita discloses the system comprises means for monitoring a rotation speed of the motor of the mine vehicle; and the system is arranged to stop the mine vehicle (Col. 5, lines 13-23). Kita does not disclose the system stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used. Dyke discloses the system stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used (Col. 1, lines 29-55). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit valued defined according to a gear used, taught by Dyke to ensure a stable vehicle behavior.

8. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648) and Schimmel et al. (4,885,690) and further in view of Kohler et al. (6,450,281).

For claim 10, Kita discloses a system for stopping an unmanned mine vehicle in a predetermined position, the system comprising: a control system including at least a

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control unit in the mine vehicle (Col. 3, lines 33-56); at least one physical obstacle arranged in a predetermined position, against which the mine vehicle is arranged to be driven (Col. 5, lines 9-12, col. 8, lines 55-64 and col. 11, lines 1-8).

Kita does not specifically disclose means for determining tractive resistance of the mine vehicle when said obstacle is approached; and means for stopping the mine vehicle when the tractive resistance exceeds a predetermined limit value. Kohler discloses means for determining tractive resistance of the mine vehicle when said obstacle is approached (Col. 1, lines 54-65); and means for stopping the mine vehicle when the tractive resistance exceeds a predetermined limit value (Col. 9, lines 25-48). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to include means for stopping the mine vehicle when the tractive resistance exceeds a predetermined limit value, taught by Kohler to reduce and stop slippage and better fuel economy of the vehicle.

For claim 12, Kita discloses the system comprises members for monitoring speed of the traction wheels of the vehicle (Col. 5, lines 58-68) and not for determining a speed of the driving power transmission. Kohler discloses members for determining a speed of the driving power transmission (Col. 3, lines 33-43). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to include members for determining a speed of the driving power transmission, taught by Kohler to ensure a stable vehicle behavior.



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9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (5,164,648), Schimmel et al. (4,885,690) and Kohler et al. (6,450,281 as applied to claim 10 above, and further in view of Dyke (3,068,716).

For claim 11, Kita discloses the system comprises means for determining a speed of the mine vehicle (Col. 3, lines 46-56); the system comprises means for monitoring a rotation speed of a motor of the mine vehicle (Col. 5, lines 58-68).

Kita does not disclose the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used. Dyke discloses the system is arranged to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used (Col. 1, lines 29-55). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the invention of Kita to stop the mine vehicle when a ratio of the rotation speed of the motor to the speed of the mine vehicle exceeds a limit value defined according to a gear used, taught by Dyke to reduce and stop slippage and better fuel economy of the vehicle.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SZE-HON KONG whose telephone number is (571)270-1503. The examiner can normally be reached on 7:30AM-5PM Mon-Fri, Alt. Fri. Eastern Time.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/6/2008

/SZE-HON KONG/

Sze-Hon Kong  
Examiner, Art Unit 3661

/Thomas G. Black/

Supervisory Patent Examiner, Art Unit 3661